LISTING OF CLAIMS

This listing of clams will replace all prior versions and listings of claims in the application.

Claim 1 (Currently Amended): A computer-readable medium whereon an image data interpolation program has been recorded to implement pixel interpolation to image data of an image represented in multi-tone dot matrix pixels on a computer, said computer-readable medium with the image data interpolation program recorded thereon, after being set ready for use on a computer, making the computer perform:

a function of image data acquisition that acquires said image data;

a first interpolation processing function that interpolates pixels to said image data without decreasing the degree of tone value difference between the existing pixels, said first interpolation processing function executing pattern matching interpolation according to a predetermined rule, when a given pattern exists in reference pixels;

a second interpolation processing function that interpolates pixels to said image data without affecting the gradation of the tones of the image; ~~and~~

a function of histogram acquisition that acquires a histogram of a number of discrete luminance values calculated by linearly combining color component brightness values of at least each of the reference pixels; and

a function of determining if the image is a non-natural image or a natural image, or that it can not be determined whether the image is either a natural image ~~nor~~ or a non-natural image, based on ~~brightness data of said acquired image data~~ the number of discrete luminance values appearing in the histogram of discrete luminance values, said determination that the image is a non-natural image resulting in said first interpolation processing function, said determination that the image is a natural image resulting in said second interpolation

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processing function, and if the image data cannot be determined to be either said natural image or said non-natural image, both the first and second interpolation processing functions are performed and results from the first and second interpolation processing functions are blended.

Claims 2-11 (Canceled).

Claim 12 (Currently Amended): An image data interpolation method interpolating pixels to image data of an image represented in multi-tone dot matrix pixels comprising:

a step of image data acquisition that acquires said image data;

a first interpolation processing step that interpolates pixels to said image data without decreasing the degree of tone value difference between the existing pixels, said first interpolation processing step executing pattern matching interpolation according to a predetermined rule, when a given pattern exists in reference pixels;

a second interpolation processing step that interpolates pixels to said image data without affecting the gradation of the tones of the image; ~~and~~

a step of histogram acquisition that acquires a histogram of a number of discrete luminance values calculated by linearly combining color component brightness values of at least each of the reference pixels; and

a step of determining if the image is a non-natural image or a natural image, or that it cannot be determined whether the image is either a natural image ~~nor~~ or a non-natural image, based on ~~brightness data of said acquired image data~~ the number of discrete luminance values appearing in the histogram of discrete luminance values, said determining that the image is a non-natural image resulting in said first interpolation processing, said determining that the image is a natural image resulting in said second interpolation processing, and if the image

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data cannot be determined to be either said natural image or said non-natural image,

performing both the first interpolation processing and the second interpolation processing

and blending results from the first interpolation processing and the second interpolation

processing.

Claims 13-22 (Canceled).

Claim 23 (Currently Amended): An image data interpolation apparatus for

interpolating pixels to image data of an image represented in multi-tone dot matrix pixels

comprising:

an image data acquisition unit that acquires said image data;

a first interpolation processing unit that interpolates pixels to said image data without

decreasing the degree of tone value difference between the existing pixels, said first

interpolation processing unit executes pattern matching interpolation according to a

predetermined rule, when a given pattern exists in reference pixels;

a second interpolation processing unit that interpolates pixels to said image data

without affecting the gradation of the tones of the image;

a histogram acquisition unit that acquires a histogram of a number of discrete

luminance values calculated by linearly combining color component brightness values of at

least each of the reference pixels; and

a first unit of determining if the image is a non-natural image or a natural image, or

that it cannot be determined whether the image is either a natural image ~~nor~~ or a non-natural

image, based on ~~brightness data of said acquired image data~~ the number of discrete

luminance values appearing in the histogram of discrete luminance values, said determining

that the image is a non-natural image resulting in said first interpolation processing, said

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determining that the image is a natural image resulting in said second interpolation

processing, and if the image data cannot be determined to be either said natural image or said

non-natural image, performing both the first and second interpolation processing and

blending results from the first interpolation processing and the second interpolation

processing.

Claims 24- 33 (Cancelled).

Claim 34 (Previously Presented): The computer-readable medium with the image

interpolation program recorded thereon according to Claim 1, wherein:

said pattern matching interpolation refers to pixels determined based on the given

pattern.